**Mapping of SAON Strategy with WMO Strategic Plan 2020-2023**

**WMO Strategic Plan 2020-2023:**

WMO Strategic Plan 2020-2023 was approved by the 18th World Meteorological Congress (Cg-18) per [Resolution 3(1)/1 (Cg-18)](http://meetings.wmo.int/cg-18/_layouts/15/WopiFrame.aspx?sourcedoc=/cg-18/English/2.%20PROVISIONAL%20REPORT%20(Approved%20documents)/Cg-18-d03(1)-WMO-STRATEGIC-PLAN-approved_en.docx&action=default), and is included in the Annex to this Resolution. The Plan includes the following overarching priorities:

1. Enhancing preparedness and reducing loss of life, critical infrastructure and livelihood from hydrometeorological extremes
2. Supporting climate-smart decision making to build or enhance adaptive capacity or resilience to climate risk
3. Enhancing socioeconomic value of weather, climate, hydrological and related environmental services

The Strategic Plan also includes the following Long Term Goals (LTG):

* **LTG1 (Services)**: Better serve societal needs: delivering, authoritative, accessible, user-oriented and fit-for-purpose information and services
* **LTG2 (Infrastructure)**: Enhance Earth system observations and predictions
* **LTG3 (Research)**: Advance targeted research: Leveraging leadership in science to improve understanding of the Earth system for enhanced services
* **LTG4 (Capacity development)**: Close capacity gap on weather, climate, hydrological & related environmental services: Enhancing service delivery capacity of developing countries to ensure availability of essential information & services needed by governments, economic sectors & citizens
* **LTG5 (Governance and policy)**: Strategic realignment of WMO structure and programmes for effective policy- and decision-making and implementation.

**SAON Strategy 2018-2028:**

[The current SAON Strategy 2018-2028](https://www.arcticobserving.org/images/pdf/Strategy_and_Implementation/SAON_Strategy_2018-2028_version_16MAY2018.pdf) was approved by the SAON Board 16th May 2018.

This Strategy is implemented by the SAON Board and the SAON Committees as described in the [SAON Implementation document](https://www.arcticobserving.org/images/pdf/Strategy_and_Implementation/SAON_Implementation_Plan_version_17JUL2018_Status_approved.pdf). The current approved version is from 17th July 2018. Strategy includes 3 Strategic Goals:

* **SG1**: Create a roadmap to a well-integrated Arctic Observing System
* **SG2**: Promote free and ethically open access to all Arctic observational data
* **SG3**: Ensure sustainability of Arctic observing

The Implementation document provides detailed information about how SAON will achieve its objectives, including description of timelines, cooperation with external organization, and resource/funding requirements. Specific Objectives are defined under each Strategic Goal. The SAON Implementation is a living document that the SAON Board, Committees, and partners will update on a continuous basis.

**Mapping of WMO and SAON Strategies:**

| ***WMO Strategic Plan***  ***SAON Strategy*** | | ***WMO LTG1***  ***(Services)*** | ***WMO LTG2***  ***(Infrastructure)*** | ***WMO LTG3***  ***(Research)*** | ***WMO LTG4***  ***(Capacity dev.)*** | ***WMO LTG5***  ***(Governance)*** |
| --- | --- | --- | --- | --- | --- | --- |
| **SG1** | **Create a roadmap to a well-integrated Arctic Observing System** | | | | | |
| O1.1 | Conduct an inventory of national observational capacities |  | * [OSCAR/Surface](https://oscar.wmo.int/surface/#/) |  |  |  |
| O1.2 | Complete an assessment of adequacy of the Arctic observational capacity in support of Arctic Societal Benefit Areas (SBAs[[1]](#footnote-1)) | * P&HM Activity 2(a) - [WMO Strategy for Service Delivery and it Implementation Plan, WMO No. 1129](https://library.wmo.int/pmb_ged/wmo_1129_en.pdf); [Decision 42 (EC-68)](https://library.wmo.int/doc_num.php?explnum_id=3166) * [EC-PHORS Services White Paper](http://www.wmo.int/pages/prog/wcp/wcasp/meetings/documents/EC-PHORS-STT-Services_WhitePaper_Nov2015.pdf) | * [OSCAR/Requirements](https://www.wmo-sat.info/oscar/observingrequirements) * [RRR Statements of Guidance](http://www.wmo.int/pages/prog/www/OSY/GOS-RRR.html#SOG), impact studies * [EGOS-IP](http://www.wmo.int/pages/prog/www/OSY/gos-vision.html#egos-ip) and new WOS-IP to replace EGOS-IP and make ref. to SAON * [WIGOS Vision 2040](http://meetings.wmo.int/cg-18/_layouts/15/WopiFrame.aspx?sourcedoc=/cg-18/English/2.%20PROVISIONAL%20REPORT%20(Approved%20documents)/Cg-18-d06-1(1)-WIGOS-ANNEX-4-approved_en.docx&action=default) | * P&HM activity 5(a) – Value chain * P&HM activity 5(b) – societal risks & opportunities * P&HM activity 5(c) – data assimilation & modelling, [PPP, YOPP](https://www.polarprediction.net/) |  | * EC-PHORS guiding & blessing assessment |
| O1.3 | Provide recommendations for a roadmap for future Arctic observational capacities |  | * [WIGOS Vision 2040](http://meetings.wmo.int/cg-18/_layouts/15/WopiFrame.aspx?sourcedoc=/cg-18/English/2.%20PROVISIONAL%20REPORT%20(Approved%20documents)/Cg-18-d06-1(1)-WIGOS-ANNEX-4-approved_en.docx&action=default) * [WIGOS Operational Plan](http://meetings.wmo.int/cg-18/_layouts/15/WopiFrame.aspx?sourcedoc=/cg-18/English/2.%20PROVISIONAL%20REPORT%20(Approved%20documents)/Cg-18-d06-1(1)-WIGOS-approved_en.docx&action=default) - Annex to draft Resolution 6.1(1)/4 (Cg-18) * [P&HM activity 3(a)](http://meetings.wmo.int/cg-18/_layouts/15/WopiFrame.aspx?sourcedoc=/cg-18/InformationDocuments/Cg-18-INF06-1(4)-POLAR-AND-HIGH-MOUNTAIN-AREAS_en.docx&action=default) – GCW surface obs. networks | * P&HM activity 5(c) – data assimilation & modelling, [PPP, YOPP](https://www.polarprediction.net/) |  | * EC-PHORS guiding & advising on WMO contribution |
| O1.4 | Create opportunities to develop and implement observations in support of Arctic Societal Benefit Areas (SBAs) | * P&HM Activity 2(b) - [ArcRCC Network](http://arctic-rcc.org/) & outlook forums | * P&HM activity 3(b) – Cryosphere monitoring * P&HM activity 3(e) – GCW partnerships for data access * P&HM Activity 1(c) – Synergies GCW – WHYCOS – WHOS * P&HM activity 1(d) – Community-based monitoring | * P&HM activity 3(e) - GCW partnerships for data access | * Use WMO Country Support Initiative to target implementation by Arctic Countries * [P&HM](http://meetings.wmo.int/cg-18/_layouts/15/WopiFrame.aspx?sourcedoc=/cg-18/InformationDocuments/Cg-18-INF06-1(4)-POLAR-AND-HIGH-MOUNTAIN-AREAS_en.docx&action=default) activity 3(f) | * WMO contribution to PAME * WMO Contribution to AMAP * Resolution 7.3(2) (Cg-18) - WMO Scientific and Technological Support to IPCC and Climate Policy |
| O1.5 | Develop a long-term repository for relevant project deliverables – establishment of ArcticGEOSS | PRCCs, PARCOF, GIPPS  Weather Services  HydroHub |  | P&HM Activity 5(d) – Demonstration projects for transition to operations |  | * EC-PHORS guiding development of projects |
| **SG2** | **Promote free and ethically open access to all Arctic observational data** | | | | | |
| O2.1 | Create a road map outlining the steps towards achieving a system that will facilitate access to Arctic observational data |  | * WMO Information System (WIS) Strategy 2.0 * P&HM Activity 3(c) - GCW data portal, and 3(d) - Cryosphere products * P&HM Activity 1(e) – Satellite data utilization, PSTG * GCW Integrated Global Cryosphere Information System |  |  | * EC-PHORS defining strategy and guiding implementation |
| O2.2 | Advance a system to facilitate access to Arctic observational data | [ArcRCC Network](http://arctic-rcc.org/) | * P&HM Activity 3(c) - GCW data portal, and 3(d) Cryosphere , products * P&HM Activity 1(e) – Satellite data utilization, PSTG * GCW Integrated Global Cryosphere Information System |  | * SO 4.3 - Scale-up effective partnerships for investment in sustainable and cost-efficient infrastructure and service delivery * Facilitate access to research observations in support of Earth System prediction | * EC-PHORS overall providing guidance |
| O2.3 | Establish a persistent consortium of organizations to oversee the development of a sustainable, world-wide system for access to all Arctic data | * EC-PHORS | * P&HM activity 3(c) - GCW data portal * P&HM activity 3(d) - Cryosphere products * EC-PHORS, GCW * P&HM Activity 1(e) – Satellite data utilization, PSTG | * EC-PHORS, PPP, YOPP | * EC-PHORS | * WMO part of SAON Consortium, working with partners * EC-PHORS defining strategy and guiding implementation * WMO participation in Arctic council |
| **SG3** | **Ensure sustainability of Arctic observing** | | | | | |
| O3.1 | Develop a strategy for long-term financial commitment in Arctic observations | * WMO contributing to drafting strategy, with input related to observational requirements and gaps for ArcPRCC Network and Arctic Outlook Forums | * WMO contributing to drafting strategy, with input related to (i) justification of the use of Arctic Observations in support of WMO application areas where services are delivered in the Arctic (WIGOS Vision 2040, EGOS-IP, GBON), (ii) WMO Members commitments to WIGOS in Arctic region, (iii) cryosphere monitoring observational requirements and gaps | * P&HM activity 5(c) – modelling techniques * P&HM activity 5(d) – Demonstration projects for transition to operations * P&HM activity 5(e) – Engagement with early career scientists | * Define how WMO Country Support Initiative can be used to target implementation by Arctic Countries | * EC-PHORS defining strategy and guiding implementation (GBON, RBON, GCW) * P&HM activity 6(a) - Partnership * P&HM activity 6(b) – Resources & synergies |
| O3.2 | Apply the strategy developed in 3.1 to advocate to funding agencies and states to ensure sustainability of Arctic observing | TBD once strategy is drafted | TBD once strategy is drafted | TBD once strategy is drafted | * Use WMO Country Support Initiative to target implementation by Arctic Countries | * TBD once strategy is drafted * EC-PHORS guiding implementation by WMO |
| O3.3 | Secure funding for international SAON secretariat and operational costs | n/a | n/a | n/a | n/a | * WMO Advocacy with Arctic Council * EC-PHORS providing general guidance |

Table below provides a mapping of SAON Strategy 2018-2028 (i.e. the 3 Strategic Goals outlined in the Strategy document, as well as the Objectives from the SAON Implementation Document) with the WMO Strategic Plan 2020-2023 Long Term Goals (LTGs).

Note: In table below, references are made to Priority activities for polar and high-mountain regions for the next financial period, as part of the WMO Strategic Plan. These are referred in the table as “P&HM Activity x”; refer to annex 1 for details.

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**Annex 1**

**Priority activities for polar and high-mountain regions for the next financial period, as part of the WMO Strategic Plan**

*(per Annex to draft Resolution 6.1(4)/1 (Cg-18))*

|  |  |  |
| --- | --- | --- |
| **No.** | **Sub-no.** | **Activity** |
| **1** |  | **Surface and Space Observations** |
|  | 1(a) | **GCW observations & linkages with space observations:**  Consolidation of the observing component of GCW as defined in the GCW Pre-Operational Phase, and including linkages with space-based observations of the cryosphere |
|  | 1(b) | **Antarctic Observing Network in RBON:**  Integration of the Antarctic Observing Network (AntON) into Global and Regional Basic Observing Networks (RBON) |
|  | 1(c) | **Synergies GCW – WHYCOS – WHOS:**  Consolidate synergies between Global Cryosphere Watch (GCW), the World Hydrological Cycle Observing System (WHYCOS) and the WMO Hydrological Observing System (WHOS) |
|  | 1(d) | **Community-based observations for Earth System prediction:**  Assess and evaluate community-based observations as a mechanism to support WMO Earth System modelling framework |
|  | 1(e) | **Utilization of satellite data & products, PSTG:**  Better utilization of satellite data and products over polar and high mountain regions in order to address identified gaps, and advocacy for critical satellite observations. Working with space agencies in order to improve algorithms allowing improvement of model performance over polar regions, including within the framework of the Polar Space Task Group (PSTG) |
| **2** |  | **Polar Predictions and Services, including Climate Services** |
|  | 2(a) | **WMO Strategy for Service Delivery:**  Addressing the requirements defined in the WMO Strategy for Service Delivery across a range of time scales, applied to Polar and High Mountain regions, including topics such as causes of arctic amplification, increasing concern for weather connections between Arctic and mid-latitudes, polar vortex variability, and impact-based forecasts |
|  | 2(b) | **PRCCs & Outlook Forums:**  Continued development of, and sustaining the Polar Regional Climate Centre Networks and Outlook Forums (Arctic, Antarctic, Third Pole) with a particular focus on cryospheric products, including NMHS linkages and user engagement |
|  | 2(c) | **Integrated services for Antarctica:**  In particular, WMO will continue exploring approaches to develop an integrated service delivery model for Antarctic weather and marine services, including a possible coordinating role of WMO, and how to engage with the Antarctic Treaty Consultative Meeting (ATCM) during this process. (Goals 1, 4 and 5) |
|  | 2(d) | **NMHSs products to Antarctic operators:**  Coordinate the products and services provided to Antarctic operators by NMHSs, build interoperability into existing systems and, where feasible, provide integrated products and services to improve service delivery capabilities of Members to meet end-user needs in the Antarctic, (Goals 1, 4 and 5) (this could be expanded to polar and high mountain regions) |
| **3** |  | **GCW Preoperational Phase** (per Annex to Resolution 6.1(4)/3)  Note: draft GCW Pre-operational phase plan is available in [Cg-18/INF 6.1(4)/1](http://meetings.wmo.int/cg-18/_layouts/15/WopiFrame.aspx?sourcedoc=/cg-18/InformationDocuments/Cg-18-INF06-1(4)-POLAR-AND-HIGH-MOUNTAIN-AREAS_en.docx&action=default) |
|  | 3(a) | **GCW surface observing network:**  Continuing to improve and optimize the global coverage of the GCW Surface Observing Network and homogeneity of cryosphere observations within the framework of WIGOS, including strong linkages with the space-based observation of the cryosphere |
|  | 3(b) | **Long term monitoring of cryospheric processes, observational user requirements, best practices & standards:**  Promoting the long-term monitoring of key cryospheric processes, facilitating the definition of observational requirements, and the development and publication of common standards and relevant regulatory and guidance material |
|  | 3(c) | **GCW Data Portal:**  Establishing the GCW Data Portal as a Data Collection or Production Centre (DCPC) in the WMO Information System (WIS), and facilitate the standardization, access to, and quality management of current and past cryosphere data, information, and products |
|  | 3(d) | **User-driven value-added cryosphere products:**  Fostering the development and publication of user-driven value-added cryosphere products based on in-situ, space-based, and airborne observations, as well as models |
|  | 3(e) | **Partnerships between operational and scientific communities to expand the availability and access to cryosphere data and information:**  Fostering collaboration through partnerships between operational and scientific communities to expand the availability and access to cryosphere data and information |
|  | 3(f) | **Implementation at national level:**  Supporting Members in implementing cryosphere-related deliverables at national level, including capacity development (monitoring, data, research, prediction, dissemination, etc.), as defined in the framework of GCW |
| **4** |  | **High-Mountain Activities** |
|  | 4(a) | **Critical knowledge gaps & advancing science:**  Identify and address critical knowledge gaps in mountain earth systems science, observations and predictive capacity through advancing science, observing systems and predictive models in the context of identifying system and societal resilience to global change and development pressures in mountains |
|  | 4(b) | **Global mountain earth system forecasting & prediction:**  Develop global mountain earth system forecasting and prediction systems to inform mountain communities of policy options to enhance resilience and to reduce and manage risk from mountain-based extreme events and climate change, both in the mountain headwaters and downstream; synergies with the WMO Hydrological Status and Outlook System will be exploited |
|  | 4(c) | **Adaptation & resilience:**  Address socially relevant user-led and rights-holders led questions and priorities on how to adapt and how to manage mountain cryosphere, ecosystems, hydrology and development to promote ecosystem conservation, provide social benefits and direct sustainable development along ‘climate resilient development pathways’ |
|  | 4(d) | **Implementation:**  Urge and facilitate the advancement of knowledge and implementation of these systems and solutions by member states and partners for mutual benefit within a global framework |
| **5** |  | **Transition from Research to Operation and Services** |
|  | 5(a) | **Value chain for all time scales:**  To ensure the connection across the full value chain from science (including improving fundamental understanding of key processes) to products and services, across all relevant timescales, noting the YOPP as a good example of such an activity for the shorter timescales and the Polar Climate Predictability Initiative (PCPI) being very relevant for longer. An outcome driven approach should be encouraged, including the development of boundary level research and model downscaling over polar and high mountains (e.g. CORDEX) |
|  | 5(b) | **Characterization of societal risks & opportunities:**  Improved characterization of societal risks and opportunities in polar and high mountain regions, where WMO can add value |
|  | 5(c) | **Serving societal needs across time scales with data assimilation and modelling techniques – PPP:**  Better service societal needs from hours across to decadal timeframes, remote and in situ polar and high mountain observational monitoring and numerical model Data Assimilation and prediction techniques, fundamental to the skilful current and future characterization of the earth system including the ocean, atmosphere, cryosphere, hydrosphere and biosphere. Continue focus on Polar Prediction Project (PPP) (long term goals 2 and 3), plan for its legacy. Advocacy for data assembly, availability and dissemination will be critical |
|  | 5(d) | **Demonstration projects for technology transfer into operations:**  Develop demonstration projects (e.g. pan-Arctic collaborative testbed) to provide a mechanism to transfer technology research results and observation advances into operations and services in a timely and effective manner |
|  | 5(e) | **Engagement with early career scientists:**  Ensure meaningful engagement with early career scientists (e.g. APECS) |
| **6** |  | **Resources and Partnership** |
|  | 6(a) | **Partnership (policy, intergovernmental and research organizations):**  Developing and consolidating partnerships with a range of agencies and organizations with interest in Polar and High Mountain regions, and who can potentially contribute to WMO or benefit from WMO activities. For example:   1. On policy matters: Arctic Council and its working Groups, Antarctic Treaty Consultative Meeting (ATCM), International Centre for Integrated Mountain Development (ICIMOD), Intergovernmental Panel on Climate Change (IPCC), the International Arctic Science Committee (IASC), and how WMO will be engaging with these groups, etc. 2. Intergovernmental, research organizations and other advocacy organizations: Polar Prediction Project (PPP) and its Year of Polar Prediction (YOPP) project and Societal and Economic Research and Applications (SERA) subcommittee, Scientific Committee on Antarctic Research (SCAR), Intergovernmental Oceanographic Commission (IOC) of UNESCO, International Maritime Organization (IMO), International Hydrographic Office (IHO), International Ice-Charting working Group (IICWG), Council of Managers of National Antarctic Program (COMNAP), Forum of Arctic Research Operators (FARO), the Group on Earth Observations (GEO), the Mountain Research Initiative (MRI), the Mountain Partnership, the Third Pole Environment (TPE), the International Association of Cryospheric Sciences (IACS), the International Commission on Snow and Ice Hydrology (ICSIH/IAHS), and UNESCO International Hydrological Programme (IHP), etc.; 3. Private sector: tourism, shipping, fisheries, natural resource extraction; 4. Indigenous communities; 5. Non-Governmental Organizations (NGOs) |
|  | 6(b) | **Efficient use of resources & synergies:**  Seek efficient use of resources, working on synergies, coordination and co-design, towards common goals |

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**Annex 2**

**Arctic Social Benefit Areas (SBAs)**

*(per* [*International Arctic Observations Assessment Framework*](https://www.arcticobserving.org/news/268-international-arctic-observations-assessment-framework-released)*, SAON)*

1. Disaster Preparedness
2. Environmental Quality
3. Food Security
4. Fundamental Understanding of Arctic Systems
5. Human Health
6. Infrastructure and Operations
7. Marine and Coastal Ecosystems and Processes
8. Natural Resources
9. Resilient Communities
10. Sociocultural Services
11. Terrestrial and Freshwater Ecosystems and Processes
12. Weather and Climate

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1. See annex 2 for list of Arctic SBAs [↑](#footnote-ref-1)